



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,867	08/06/2003	Susumu Kashiwase	848075-0053	8336
29619 7590 05/06/2011 SCHULTE ROTH & ZABEL LLP ATTN: JOEL E. LUTZKER 919 THIRD AVENUE NEW YORK, NY 10022				
EXAMINER				
NGO, NGUYEN HOANG				
ART UNIT		PAPER NUMBER		
2473				
MAIL DATE		DELIVERY MODE		
05/06/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/635,867

Applicant(s)

KASHIWASE, SUSUMU

Examiner

NGUYEN NGO

Art Unit

2473

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 28-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-12,15-21,28,29,31-41 and 44-52 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

This communication is in response to the amendment of 3/18/2011. All changes to the Claims have been entered. Accordingly, Claims 1-21, 28-44, and 45-52 are currently pending in the application. Claims 22-27, 53-61 are withdrawn. Examiner urges applicant to cancel such withdrawn claims.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first allocation section and the second allocation section must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. Claims 1-21, 28-44, and 45-52 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.
3. Nowhere in the specification is there "a first allocation section and a second allocation section". Examiner urges applicant to specifically point out such limitations.
4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. The dependent claims recites the limitation "a first wireless communication terminal", "a second wireless communication terminal", "a allocation information allocating section" throughout the dependent claims. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 2, 4-11, 16-21, 28, 29, 31-40, 45-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gitlin et al. (US 6018528), in view of Yano et al. (US 6563806), in view of Ishii et al. (US 6977913).

Regarding claim 1, 16, 28, 45 Gitlin discloses a communication system comprising:

a single-carrier wireless communication terminal (low-speed users D, K, N, P, R, S, T of figure 5) for performing a packet communication (communications

transmission medium, column2 lines 58-60) with said base station (low-speed users will be permitted to fill one or more of the available time slots 44 in a frame (one carrier), column 4 lines 88-23 and 50 of figure 5); and

a multi-carrier wireless communication terminal (high speed users B, G, L of figure 5) for performing a packet communication to said base station substantially at the same time (higher-speed users can fill one or more of the available frequency bands 42 (plurality of carriers) or time slots 44, col4 lines 20-23),

Gitlin however fails to specifically disclose the specific limitation of a base station and it's specific components. Gitlin however discloses of cellular communication systems that may use the concept described above (col1 lines 5-31) and it is well-known that a cellular communication system comprises a base station. In a similar endeavor, Yano discloses of such a system comprising a base station, a first wireless communication terminal and a second wireless communication terminal (figure 1 and abstract). Yano further discloses;

a first allocation section for at least one of allocating a carrier to said single-carrier wireless communication terminal and carrier to said multi-carrier wireless communication terminal from a plurality of carriers, said allocated carrier or carriers to be used during communication with said base station (processor (CPU) which serves as channel assignment unit based on the invention and generating a information frame indicative of granting a multi-channel assignment (plurality of

carriers) or indicative of granting a single-channel assignment (one carrier) which are transmitted by basestation to the mobile stations, abstract and col4 lines 63-68 and col4 lines 41-67 and col12 lines 34-53 and col9 lines 34-43 and figure 2);

It would thus be obvious to a person skilled in the art at the time the invention was made to incorporate the concept of optimizing spectral efficiency using time-frequency code slicing as disclosed by Gitlin into the system comprising a base station for assigning communication channels as disclosed by Yano in order to send data between base stations and user terminals in a efficient manner.

The combination of Yano and Gitlin however fails to specifically disclose the details of a second allocation section for allocating allocation information for at least one of said single-carrier wireless communication terminal and said multi-carrier wireless communication terminal based on the availability of said allocation information, wherein said allocation information identifies a wireless communication terminal communicating with said base station and a storage section for storing said allocation information. Yano however discloses of ram which stores various tables wherein a first management table is used for registering at least on candidate channel for single-channel communications (one carrier) and a second management table for registering a group of candidate channels for multi-channel communications (plurality of carrier), (col3 lines 1-15 and col4 lines 63-67 and col5 lines53- col6 line 7 and figure 2) and further discloses of assigning channels to mobile stations at the base station (col2 lines 44-50 and col5 lines 53-62 and col9 lines 34-43). Yano also

discloses of sending information frames indicative of assignments, channel configuration, base station identifier, and the like (col12 lines 37-52). In a similar field of endeavor, Ishii discloses the similar concept of channel assignment in which a channel registration section in which the correspondence between addresses and channels are registered (col4 lines 29-40), more specifically Ishii discloses;

a second allocation section for allocating allocation information for at least one of said single-carrier wireless communication terminal and said multi-carrier wireless communication terminal (performing communication by simultaneously using two channels, wherein communications can be performed using two channels (as seen from Yano), col2 lines 60-67) based on the availability of said allocation information (channel registration section searches the correspondence between the registered addresses and channels on the basis of the input address signal, col4 lines 30-45 and col7 lines 5-15), wherein said allocation information identifies a wireless communication terminal communicating with said base station (addresses used, col4 lines 29-40) and

a storage section for storing said allocation information in relation to said carrier or carriers that have been allocated to at least one of said single-carrier wireless communication terminal and said multi-carrier wireless communication terminal (registration of channels and addresses (similar to tables of Yano), col5 lines 5-11)

It would have thus been obvious to a person skilled in the art at the time the invention was made to incorporate the concept of storing allocation information (registration of addresses of destinations with channels) as disclosed by Ishii into the

method for assigning communication channel at a base station as disclosed by Gitlin and Yano, in order to efficiently and correctly store the needed information at a base station so that communications may be accomplished through channels from the base station to a mobile station and so that data may be transferred through the correct channels and which are properly registered..

Regarding claim 2, 29, the combination of Gitlin, Yano, Ishii, more specifically Yano discloses a wireless communication system as claimed in claim 1 wherein said allocation information storage section stores said allocation information in such a manner that said allocation information is arrayed in accordance with a predetermined sequence; and said allocation information applying means allocates said allocation information with respect to said first wireless communication terminal from one direction of said array, and also allocates said allocation information to said second wireless communication terminal from the other direction of said array (col5 lines 35-45).

Regarding claim 4, 31, the combination of Gitlin, Yano, Ishii, more specifically Yano discloses having said allocation information storage section store the allocation information allocated to said wireless communication terminal as separate arrays (col5 line51-col6 line8 and col15 lines 25-56).

Regarding claim 5, 9, 17, 19, 21, 32, 38, 46, 50, 52, the combination of Gitlin, Yano, Ishii, more specifically Gitlin discloses a wireless communication system as claimed in

claim 1 wherein said packet communication is carried out by using a variable length packet (figure 4).

Regarding claim 6, 7, 10, 11, 18, 20, 35, 36, 39, 40, 49, 51, the combination of Gitlin, Yano, Ishii. more specifically Gitlin discloses a communication system as claimed in claim 1, further time slot allocating section for allocating time slots which are used in packet communications by said first and second wireless communication terminals (as seen in figure 5), the time slot allocating section allocates one wireless communication terminal among said first and second wireless communication terminals to one unit of a time slot distribution used by said first (low-speed users D, K, N, P, R, S, T being allocated one time slot as seen in figure 5) and second wireless communication terminals in the packet communications every said carrier (high-speed user G being allocated to time slots across frequency bands f0 to f6 of figure 5). Gitlin further discloses allocation of first wireless communication terminal and second wireless communication terminal be in an independent manner (independent transmissions, col8 lines 24-30).

It should further be noted that Yano discloses that in TDMA, carrier frequencies are used to transmit a frame, which includes multiple time slots having these carrier frequencies (col5 lines 5-13) thus the base station of Yano discloses a frame allocating section (figure 2).

Regarding claim 8, 37 the combination of Gitlin, Yano, Sawaki, Ishii fails to specifically disclose allocating said first wireless communication terminal and said second wireless communication terminal in an alternate manner. However this would have been obvious to a person skilled in the art to alternate allocations between users, as this is simply a network parameter that may be chosen by the network/administrator. It should further be noted that this is simply a system design choice.

Regarding claims 33, 34, 47, 48, the combination of Gitlin, Yano, Ishii, more specifically Yano discloses a wireless communication system as claimed in claim 28 wherein when said second wireless communication terminal performs the communication by using said plurality of carriers, said allocation information applying section allocates said single-carrier/multi-carrier allocation information to said second wireless communication terminal in a case that said multi-carrier/single carrier allocation information is unavailable (col2 lines 56-67 and col10 lines 1-12 and col12 lines 20-33).

4. Claims 12, 15, 41, 44, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gitlin et al. (US 6018528), in view of Yano et al. (US 6563806), in view of Ishii et al. (US 6977913), in further view of Krishnamoorthy et al. (US 2002/0051424).

5. **Regarding claim 12, 15, 41, 44**, the combination of Gitlin, Yano, and Ishii fails to specifically disclose having the time slot distribution determining section determine

the time slot distributions which can be used by said first wireless communication terminal and said second wireless communication terminal based upon a comparison result. Yano however discloses selecting a channel that meets the specified communication quality (col1 lines 34-40). Krishnamoorthy however discloses a method for assigning time slots to a user based upon user's data rate requirement, the actual data rate, and quality of service contracted for by the user. Krishnamoorthy further discloses that the assignment of the time slots within the frame is made dynamically (abstract and page 1 [0004]). It would have thus been obvious to a person skilled in the art at the time the invention was made to incorporate the concept of determining the time slot distributions which can be used by a user as disclosed by Krishnamoorthy, into the method of optimizing spectral efficiency using time-frequency code slicing as disclosed by Gittlin, Yano, and Ishii in order to efficiently determine the allocation of time slots to different users.

Response to Arguments

1. Applicant's arguments with respect to claims 1-21, 28-44, and 45-52 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

2. Claims 3, 13, 14, 30, 42, and 43, is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
4. Refai (US 7020103)
5. Sadowski (US 2002/0191685)
6. Kasapi et al. (US 2003/0123404)
7. Alberty et al. (US 6178330)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGUYEN NGO whose telephone number is (571)272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KWANG B. YAO/
Supervisory Patent Examiner, Art Unit 2473

/N. N./

Examiner, Art Unit 2473